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SHORT REPORT

Transcatheter Embolisation of a Giant Splenic Artery Aneurysm. Case Report

N. H. Davies*, D. Maudgil, G. Hamilton and A. Watkinson

Department of Radiology, Royal Free Hospital, London, UK

Introduction

Splenic artery aneurysms (SAAs) comprise 60% of visceral artery aneurysms and although they can present at any age, they most commonly present in the fifth and sixth decades of life.¹ They are associated with multiparity and portal hypertension and are more common in women. Historically SAAs greater than 2 cm in diameter are treated surgically because the risk of rupture, particularly during pregnancy, is high.² The role of transcatheter embolisation^{3–5} is still evolving but is likely to become increasingly important as more asymptomatic visceral aneurysms are diagnosed as a result of the ready access to ultrasound, CT and MRI.

Case Report

An 84-year-old female patient with a history of three-vessel coronary artery disease and a chronic type B thoracic artery dissection presented with a three-week history of vague left upper abdominal pain. Initial investigation with ultrasound was followed by a contrast enhanced CT scan. This revealed a 10 cm diameter splenic artery aneurysm with extensive calcification of the splenic artery wall (Fig. 1).

Following discussion an endovascular mode of treatment was selected because of the perceived high risk of aneurysm rupture and the patient's unsuitability for general anaesthesia.

Access was obtained via a right common femoral artery puncture following local infiltration with 1%

Lignocaine. A 5 French sheath (Cordis Europe, Roden, The Netherlands) was inserted and a sidewinder 1 hydrophilic catheter (Terumo, Tokyo, Japan) and a hydrophilic 0.035-inch guide wire (Terumo, Tokyo, Japan) were used to select the coeliac axis. The aim of the procedure was to access the splenic artery beyond the origin of the aneurysm and coil embolise the "back door" to prevent back filling of the aneurysm. Subsequent further coil embolisation of the proximal splenic artery or "front door" was intended to induce aneurysm thrombosis. However, the splenic artery was extremely tortuous and the arterial wall at the site of the aneurysm had a 1 cm defect associated with a sharp downward angulation of the distal splenic artery. Despite numerous attempts with a standard hydrophilic catheter and a microcatheter (Terumo, Tokyo, Japan) a stable position beyond the neck of the aneurysm could not be obtained (Fig. 2). Arterial phase CT scans pre-procedure demonstrated collateral vessels to the spleen via the short gastric arteries and embolisation of the distal splenic artery was therefore performed with 2 ml of histoacryl glue (Braun, Sheffield, U.K.) and lipiodol (Guerbet laboratories, Milton Keynes, U.K.) in a ratio of 1 part glue to 3 parts lipiodol. The glue was injected until no flow was present within the splenic artery beyond the aneurysm. The main splenic artery or "front door" was then embolised (Fig. 3) with four fibred coils (Cook, Letchworth, U.K.) (three 4 cm × 3 mm, one 8 cm × 5 mm). Angiographically there was complete occlusion of the splenic artery at the end of the procedure and there were no peri-procedural complications.

A CT scan performed 24 h after the procedure (Fig. 4) showed complete thrombosis of the aneurysm with

*Corresponding author. Address: Department of Radiology, Royal Free Hospital, Pond Street, London NW3 2QG, UK.



Fig. 1. Arterial phase CT scan showing a partially thrombosed giant splenic artery aneurysm (arrow).

a large proportion of the spleen enhancing well during the arterial phase scanning.

The patient was discharged at 24 h and remains completely asymptomatic at 6 months. She has declined any further imaging follow up.

Discussion

Giant splenic artery aneurysms present a management dilemma as little is known about the natural history of this condition. Most clinicians would propose surgical excision, either at open surgery or laparoscopically, because it is assumed that the risk of rupture is high. However the risk of such surgery in an elderly patient

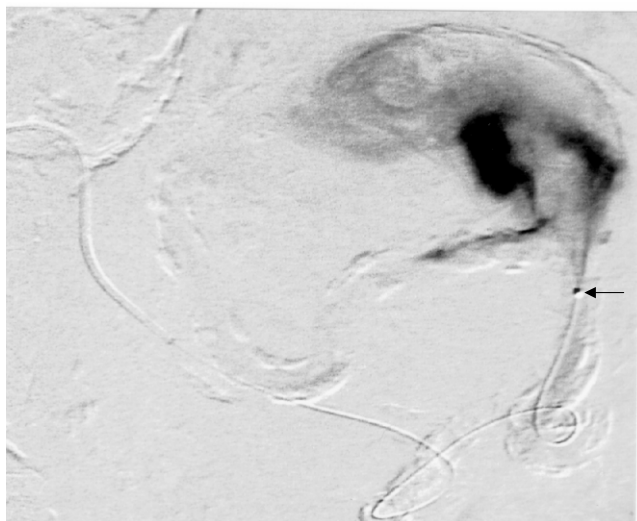


Fig. 2. Digital subtraction angiogram. The tip of the microcatheter (arrow) is seen within an extremely tortuous, calcified splenic artery. Contrast is seen flowing into the wide neck of the aneurysm.



Fig. 3. Completion angiogram. Coils are present within the proximal splenic artery (white arrows). Lipiodol and glue are seen within the aneurysm and the distal branches of the splenic artery (black arrows).

with co-morbidity should not be underestimated. We present an endovascular method of treatment using a combination of glue and coils. Although embolisation with coils of both the afferent and efferent vessels to the aneurysm should be considered optimal endovascular treatment for this condition, the tortuous anatomy in this case prevented coils being placed in the distal artery and hence embolisation of the distal splenic artery and aneurysm was performed with lipiodol and histoacryl glue. No flow reduction technique was used when deploying the glue because of the difficulty in performing any catheter exchanges in this patient.

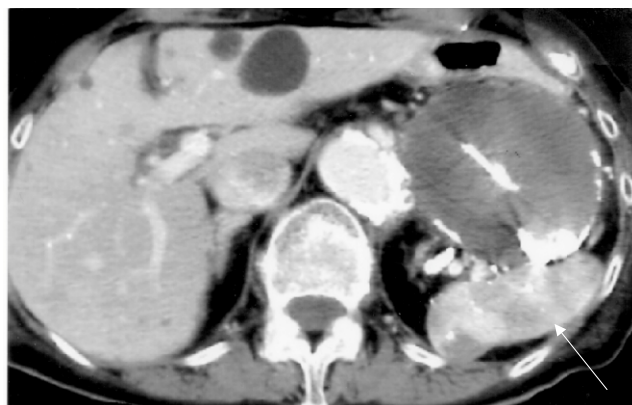


Fig. 4. CT scan 24 h post embolisation. The aneurysm has completely thrombosed with only Lipiodol seen within the aneurysm sac. Note the patchy enhancement within the spleen (arrow).

The spleen retained some of its blood supply following the procedure. This was predicted by identification of patent short gastric arteries on the pre-procedure CT scan, therefore reducing the risk of significant splenic infarction and possible abscess formation. Hence although the addition of glue as an embolic agent in this setting has not been previously described, it does appear to be a useful, effective and safe option in the treatment of these difficult patients.

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